

REMARKS

Reconsideration of the application in light of the present amendments and the following remarks is respectfully requested.

I. Status of the Claims:

Claims 6 and 7 have been amended as discussed below. No new matter has been added by these amendments. Claims 8-23 and 29-35 have previously been withdrawn from consideration. Therefore, claims 1-7 and 24-28 are currently pending and at issue in the application.

(A) Claim Amendments

Claim 6 has been amended to recite the rate at which the claimed transgenic animal displays Alzheimer's Disease-related pathology. Support for the amendment is found in the specification at p. 3, l. 15, p. 11, ll. 15-17 and p. 12, ll. 7-9. No new matter has been introduced by this amendment.

Claim 7 has been amended to clarify that the claimed transgenic mouse is a descendent of the transgenic mouse of claim 4 and expresses said transgene. Support for the present amendment is found in the specification at p. 20, l. 27-p. 21, l. 2. No new matter has been introduced by this amendment.

II. Objections to the Specification:

Applicants acknowledge Examiner's comments regarding the references cited in the specification.

The Examiner has objected to the specification because there are references to specific figures in the specification. Applicants have amended the specification to omit reference to the figures. Applicants submit that amendment to the specification does not add new matter.

In view of the present amendment, withdrawal of the instant objection is earnestly solicited.

III. Claim Rejections:

The rejections set forth by the Examiner are summarized and addressed as follows:

(A) Rejections Under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 1-7 and 24-28 as being indefinite. Particularly, the Examiner has rejected claims 1 and 24 as indefinite for reciting “a heterologous amyloid precursor protein 695 (APP₆₉₅) polypeptide.” The Examiner maintains that the term does not specifically define the metes and bounds of the present invention because “It is unclear if heterologous is in reference to the sequence relative to the mammal in which it is expressed, or just not naturally found in nature.” (See Office Action, p. 4, para. 2). Applicants respectfully traverse the present rejection and request reconsideration in view of the following remarks.

Applicants submit that the term “heterologous” has a common and well established meaning in the art. As used in the art, the term heterologus means a sequence (polynucleotide or amino acid) foreign to the host animal’s unmodified genome. For example, the sequence may be from another species. The applicants have not adopted a definition of the term heterologous which is inconsistent with, or contrary to, the common meaning attributed in the art. Rather, the applicants use the term in accordance with its plain meaning to define the metes and bounds of their invention. In doing so, the applicants have described their invention such that one skilled in the art would readily appreciate the scope of the present invention.

The Examiner further maintains that the phrase “a heterologous amyloid precursor protein 695 (APP₆₉₅) polypeptide” renders the claims indefinite because it is without limitation as to the length of the polypeptide sequence, or the presence of specific mutations. Applicants respectfully submit that the phrase, while not restricted to the length of the polypeptide sequence or the presence of specific mutations, nonetheless sets forth the invention with sufficient clarity and particularly as to avail one of ordinary skill

of the scope of the invention. Applicants further note that the claims require the presence of K670N, M671L and V717F amino acid substitutions in the transgene.

The Examiner has also rejected claim 6 as being allegedly indefinite with respect to the term "accelerated." Without conceding the correctness of the Examiner's rejection, claim 6 has been amended. Applicants submit that the present amendment addresses and overcomes the Examiner's rejection.

The Examiner rejected claim 7 as allegedly being indefinite for failing to distinguish whether or not the claimed transgenic mouse must have the transgene of the present invention. Without conceding the correctness of the Examiner's rejection, claim 7 has been amended to explicitly recite the implicit expression of the transgenic progeny of a transgenic mouse of the invention. Applicants submit that the present amendment addresses and overcomes the Examiner's rejection.

In view of the present remarks and amendments, the rejections 35 U.S.C. § 112, second paragraph are believed to have been addressed and overcome. Reconsideration of claims 1-7 and 24-28 and withdrawal of all rejections thereof under § 112, second paragraph is requested.

(B) Rejections Under 35 U.S.C. §§ 102(a) and (e). The Examiner has rejected claims 1, 2, 4-7, 24, 25, 27 and 28 as anticipated by each of the following references: U.S. Patent Application No. 2001/0016951 ("Sommer"), U.S. Patent No. 6,037,521 ("Sato"), and U.S. Patent No. 6,509,515 ("Hasio"). The Examiner maintains that each of the references describe a non-human mammal whose genome comprises a polynucleotide sequence that encodes an amyloid precursor polypeptide having three mutations, Lys670Asn, Met671Leu, and Val717Phe. The rejections are respectfully traversed.

It is well established that for a reference to anticipate a claim under 35 U.S.C. §102, the prior art reference must disclose each and every limitation of the claim either literally or inherently. Absent a showing that the prior art discloses an invention identical to the claimed invention, there can be no anticipation. See MPEP §2131.

Sommer states that a transgenic mouse useful as an animal model for Alzheimer's Disease may be produced that expresses human APP₇₅₁ having two mutations, Lys670Asn, Met671Leu ("Swedish mutation") (paragraphs 31 and 45). Sommer merely mentions the missense mutation Val717Phe ("Indiana mutation"), however Sommer does not teach a transgenic mouse carrying the mutation (paragraph 3). Furthermore, Sommer does not teach or suggest the presently claimed transgenic animal that expresses an APP₆₉₅ polypeptide comprising the three enumerated mutations.

Sato states that an animal model for Alzheimer's disease may be produced that has a transgene that encoding a 99 to 103 amino acid carboxy-terminus portion of human APP. Sato states that the APP fragments have specific missense mutations, e.g., Glu618Gln and Val642Ile, or a Swedish mutation (col. 8, ll. 42-45 and col., 9, l. 9). Sato does not disclose or teach the expression of an APP fragment having the Indian mutation. Moreover, Sato does not disclose or suggest the claimed transgenic animal that expresses a single APP₆₉₅ polypeptide comprising the specified mutations.

Finally, Hsiao states that the expression of human APP₆₉₅ variants may be expressed from a prion protein (PrP) cosmid vector in transgenic mice. Hsiao states that transgenic mice may contain one of seven different PrP/APP chimeric transgenes (see, e.g., Fig. 2) which include human APP₆₉₅ carrying the Swedish mutation and another carrying the Indiana mutation. Hsiao, however, states that the mutation at position 717 is unnecessary (see col. 12, ll. 34-36). Thus, Hsiao does not teach or suggest a transgenic animal having a transgene encoding APP₆₉₅ comprising the three specified mutations.


None of the references cited by the Examiner disclose each of the limitations of the present claims and therefore none of the reference satisfy the statutory requirement of anticipation. Furthermore, none of the references render obvious the claimed invention. In view of the present remarks, applicants respectfully request reconsideration of claims 1, 2, 4-7, 24, 25, 27 and 28 and withdrawal of all rejections thereof under 35 U.S.C. §§ 102(a) and (e), accordingly.

CONCLUSION

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



Michael J. Sullivan
Reg. No. 54,479
Agent for Applicants

DARBY & DARBY, P.C.
Post Office Box 5257
New York, NY 10150-5257
Phone (212) 527-7700